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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,529	06/05/2006	Stephan Bolz	S4-03P04584	5910
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EXAMINER				
CLARK, CHRISTOPHER JAY				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/566,529

**Applicant(s)**

BOLZ ET AL.

**Examiner**

CHRISTOPHER J. CLARK

**Art Unit**

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 7-13 have been considered but are moot in view of the new ground(s) of rejection.

***Specification***

1. The disclosure is objected to because of the following informalities: It is believed that there are various errors in the disclosure due to an inadequate translation (possibly by machine) as evidenced in the Applicant's amendment and remarks filed November 3, 2008. It is strongly suggested by the Examiner that the applicant thoroughly reviews the specification, particularly pages 7-11 to ensure that the invention is disclosed correctly and completely. It should be noted that no new matter is to be entered.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant has amended Claim 7 to include the limitation that entails the MOSFET transistor turning on or remaining on "when a short circuit to the high on board electrical system voltage is conducted to the drain".

There is no support for such a limitation in the applicant's disclosure. Upon the applicant's amendment on November 3, 2008, the term "cut-off" has been replaced with "pinch-off" based on a translation error. The German word in question is confirmed to be translated into "pinch off region" or "saturated region" as seen in the translation provided by the *Interactive Terminology for Europe*. It is considered that the pinch off region occurs within or is synonymous with a transistor's saturated region. Based on Applicant's disclosure on Pages 9 and 10, it is considered beyond the scope of one skilled in the art to perform the act of reducing the voltage  $V_{gs}$  of a transistor T1 to its threshold voltage and place it in its saturated or pinch-off region of operation since it is known in the art that by reducing  $V_{gs}$  to its threshold voltage places it in a cut-off or near cut-off mode of operation.

4. In the event that applicant removes the aforementioned limitations, the previous rejection will stand as seen below.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gscheidle (U. S. Patent 6,031,705) in view of Williams (U. S. Patent 6,172,383).
3. In re Claim 7, Gscheidle teaches a device for protecting an electronic module disposed in a control device in a multi-voltage on-board electrical system having an accumulator with a low

on-board electrical system voltage against short circuiting to a high on-board electrical system voltage as seen in Figure 1, comprising:

- a MOSFET (T2) transistor having a drain source path inserted between a control device connection (Ue1) and a connection of the electronic module (Ua1), and with:
    - a source connected to the connection of the electronic module
    - a drain connected to the control device connection
    - a gate
  - a Zener diode (D5) connected between said gate and said source of said MOSFET transistor
  - a gate resistor (R4) connected between said gate of said MOSFET transistor and a positive pole of the first accumulator (Ubatt)
4. The teaching of Gscheidle does not teach a diode connected in parallel with the gate resistor.
5. Williams teaches as seen in Figures 8A-D that it is known to connect a diode across a gate resistor to allow the voltage to fall much faster during removal of a triggering signal and to rise at a slower rate to prevent any ringing and overshooting during initiation of a triggering signal (Column 7 Lines 25-36).
6. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the gate diode as taught by Williams in order to turn off the protective transistor more rapidly when a fault voltage is detected and thus reduce the risk of damage to the protected circuitry while turning on the protective transistor at a slower rate to prevent any ringing and overshooting.

7. The examiner would like to note that neither the teaching of Gscheidle or Williams specifically teach implementing the protective device as discussed thus far in a multi-voltage system. Upon their combination, they do possess all of the structural elements as claimed and are therefore considered capable of matching the intended use of being used in a multi-voltage system.
8. In re Claim 8, Gscheidle teaches that the electronic module is disposed in control device for controlling low-power consumers or for processing/transmitting data (Column 1 Lines 15-47).
9. In re Claim 9, Gscheidle teaches that Zener diode is configured with a breakdown voltage lower than a maximum permitted gate source voltage of said MOSFET transistor (Column 3 Lines 55-57).
10. In re Claim 10, Gscheidle as modified by Williams discloses the claimed invention except for the source voltage of the transistor being specifically limited to a value which is the difference of the accumulator voltage and the threshold voltage. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to limit the source voltage of the transistor (which is also the voltage being supplied to the protected circuitry) to a value that will not harm the circuitry being protected since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).
11. In re Claim 11, Gscheidle teaches that upon detection of an over voltage condition, the gate voltage is reduced by shorting the gate voltage via transistor T1 (Column 4 Lines 7-12). Upon modification by Williams, the shorting of this voltage would result in the gate diode being

activated and therefore limiting the voltage across the gate resistor/diode parallel pair to the diode's activation voltage. As the voltage of the accumulator is being reduced as a result of being shorted, it should be easily seen that the voltage supplied to the gate would not be higher than the activation voltage of the diode in combination with the reduced accumulator voltage.

12. In re Claim 12, Gscheidle teaches that the protective circuit is integrated in an ASIC (Column 1 Lines 15-47).

13. In re Claim 13, Gscheidle teaches that the multi-voltage on-board electrical system is a motor vehicle on-board electrical system (Column 1 Lines 15-47).

5.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER J. CLARK whose telephone number is (571)270-1427. The examiner can normally be reached on M-F, 10:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-727-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJC  
1/8/2009

/Stephen W Jackson/  
Primary Examiner, Art Unit 2836